

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) : In an multi-protocol label switching system (MPLS) having a working path over which data is carried from a source to a destination and further having a protection path over which data from ~~said the~~ source to ~~said the~~ destination can be carried, a method of initiating an MPLS protection path switch over from ~~said the~~ working path to ~~said the~~ protection path comprising the steps of:

- a. detecting a failure on ~~said the~~ working path;
- b. transmitting a failure notification message from ~~said only a~~ first switching node to at least a second, switching node of ~~said the~~ working path;
- c. routing data from ~~said the~~ working path to ~~said the~~ protection path upon the receipt of ~~said the~~ failure notification message at at least one of ~~said the~~ second switching node and a third switching node of ~~said the~~ working path.

Claim 2. (Original) : The method of Claim 1 further including the step of re-routing data from ~~said the~~ protection path to ~~said the~~ working path upon the determination that ~~said the~~ failure on ~~said the~~ working path has been corrected.

Claim 3. (Original) : The method of Claim 1 wherein ~~said the~~ failure notification message travels along a path through ~~said the~~ MPLS system, extending between ~~said the~~ destination and ~~said the~~ source.

Claim 4. (Currently Amended) : A multi-protocol label switching (MPLS) system protection switch, ~~said MPLS switch comprised of comprising:~~

- a first data input port into which MPLS data is received from a data source;
- a first data output port from which MPLS data is sent to a second MPLS switching system comprising an MPLS working path;
- a second data output port from which MPLS data is sent to a third MPLS switching system comprising an MPLS protection path; and
- a second data input port adapted to connect to a path that follows the MPLS working path for receiving failure notifications;

whereby data received at said the data input port from said the data source can be selectively routed from said the second MPLS switching system to said the third MPLS switching system.

Claim 5. (Original) : The MPLS switching system of Claim 4 further comprising a control input port protection path failure messages are received from at least one said of the second MPLS switching system and said the third MPLS switching system.

Claim 6. (Currently Amended) : A multi-protocol label switching (MPLS) system comprised of:

a first MPLS protection switch having a data input port into which MPLS data is received from a data source;

a second MPLS switching system coupled to said the first MPLS protection switch via a first data path carrying MPLS data, said the first data path comprising an MPLS working path;

a third MPLS switching system coupled to said the first MPLS protection switch via a second data path capable of carrying MPLS data, said the second data path comprising an MPLS protection path;

an upstream reverse notification tree (RNT) data path extending at least between said the second MPLS switching system to said the MPLS protection switch carrying data by which a switchover from a working path to a protection path can be initiated.

Claim 7. (New) : The method of Claim 1, wherein the first switching node is upstream to the failure.

Claim 8. (New) : The method of Claim 1, wherein the failure is an uplink failure and is detected by a node upstream to the failure.

Claim 9. (New) : The method of Claim 1, wherein the failure is a downlink failure and is detected by a node downlink to the failure.

Claim 10. (New) : The method of Claim 1, wherein the failure is a bi-directional failure and is detected by a pair of nodes downlink and uplink to the failure.

Claim 11. (New) : The method of Claim 1, wherein the failure is a node failure and is detected by a pair of nodes downlink and uplink to the failure.

Claim 12. (New) : A method for MPLS protection switching from a working path to a protection path comprising:

transmitting a failure notification to a protection switch node along a path that follows the working path; and

routing data at the protection switch node from the working path to the protection path upon receipt of the failure notification.

Claim 13. (New) : The method of Claim 12, wherein the failure notification is transmitted in a direction reverse to the working path.

Claim 14. (New) : The method of Claim 12, wherein the path that follows the working path mirrors the working path.

Claim 15. (New) : The method of Claim 12, further comprising detecting a failure.

Claim 16. (New) : The method of Claim 12, wherein the failure notification is transmitted by a node upstream to the failure.

Claim 17. (New) : The method of Claim 15, wherein the failure is an uplink failure and is detected by a node upstream to the failure.

Claim 18. (New) : The method of Claim 15, wherein the failure is a downlink failure and is detected by a node downlink to the failure.

Claim 19. (New) : The method of Claim 15, wherein the failure is a bi-directional failure and is detected by a pair of nodes downlink and uplink to the failure.

Claim 20. (New) : The method of Claim 15, wherein the failure is a node failure and is detected by a pair of nodes downlink and uplink to the failure.